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Chapter 9: Financial Plan

Chapter Purpose and Objectives:

This chapter describes how to develop a Financial Plan to support the Business Concept. By developing a comprehensive picture of funding needs and a funding strategy, a financial plan will help document fiscal needs and responsibilities based on the Strategy Sets. This chapter also discusses challenges associated with financial planning for TMCs, including how to justify TMC needs versus other competing priorities within a department, agency or region. Examples of how to document funding needs, timelines, potential sources, etc. are included in this chapter.

Key Messages/Themes:

The Financial Plan needs to address the TMC-specific funding requirements, and tie these requirements back to the Business Concept, Value Proposition, improvements required to develop the capabilities required, and the strategies and services needed to manage, operate, and maintain a TMC.

Key Topics and Issues to be Covered:

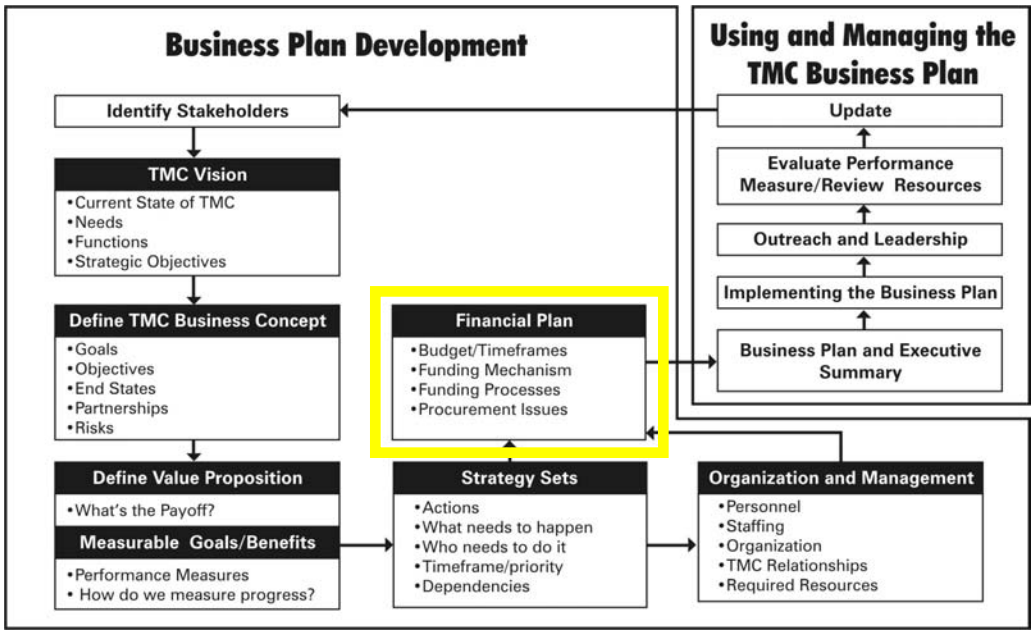
The previous chapters have already justified the proposed strategies, support services and operations of the TMC; identified the multi-year plan component that lays out what is required to support these items; indicated what influence that they would have on performance measures and benefits provided based on investment; and how, collectively, these various initiatives would be rolled up and identified as capital cost and an annual cost per year. This chapter addresses a series of questions including:

- What are the appropriate sources of funding within the agency and/or region?;
- What are the funding cycles and key milestones that need to be factored in to the business planning process?; and
- What are other issues to consider and other key factors with funding?

How This Chapter Relates to Other Chapters:

The Financial Plan builds on all the previous chapters in that it estimates the financial impact of the proposed TMC considering the Business Concept, Strategies, and Organization and Management. It is the last part of the Business Plan content, yet in many cases it's often the most critical piece of the plan as it maps dollars to end-states and strategies; it's the 'bottom line' that usually speaks to the key decision makers and authorities.

As illustrated in the following graphic, the Financial Plan utilizes specific input from Chapter 7, Strategy Sets and Chapter 8, Organization and Management, and describes how the financial needs are derived and various means of funding both the one-time capital expenditures and the annual operating expenditures.



There are several issues that need to be considered when developing a Financial Plan as part of a TMC Business Plan. While many agencies develop funding requirements for overall TMS programs, the specific needs, roles and functions of the TMC, as articulated in the TMC Business Concept, need to be specifically oriented towards a sustainable funding stream to not only design and build the facility but also to operate and maintain it for an extended period.

Remaining Sections:

9.1 Assigning Funding Requirements to Strategy Sets
9.2 Budgeting and Funding Definitions, Issues, and Challenges
9.3 Budget Planning Process
9.4 Fund Sharing Models

9.1 Assigning Funding Requirements to Strategy Sets

The first step in developing the Financial Plan is to determine the estimated costs to carry out the strategies and action plans resulting from the previous activities in the development of the Business Plan. These funding requirements should take into consideration items such as:

- Initial capital costs
  - Planning and design costs
  - Contractor and vendor costs
  - Integration costs
- Operating and Maintenance Costs over the timeframes previously identified
- Staffing requirements (new positions, staff training needs, etc.)

One of the shortcomings of agencies and consultants working on TMC implementation plans is failing to account for some of the ancillary and incidental costs associated with implementing a TMC. Often the annual operating responsibilities and associated costs are not addressed early enough in the program development and operating units find

themselves struggling to fund the TMC operational expenses from existing program annual maintenance budgets or other operating unit annual budgets. This obviously results in less than adequate resources for the TMC and also reduces the effectiveness of the other activities' budgets that get reduced. This is a "lose-lose" situation which can, and should be, avoided with some advance planning that leads to a strong Financial Plan that management supports and endorses.

To help account for the array of costs associated with a Traffic Management Center program, a template is presented itemizing the various elements of a capital and operating budget for a new TMC. Any specific TMC program will have various combinations of the illustrated cost items requiring the template to be customized for each specific situation. The objective of the illustrated template is to trigger the thought process that needs to go into a TMC Financial Plan.

TEMPLATE FOR DETERMINING TMC FINANCIAL NEEDS
Capital Expenditures

TMC Strategies	Outside Services	Contractor
Planning and Conceptual Design	$ -	
Plans, Specifications, and Estimate	$ -	
Land		$ -
Construction		$ -
Permits		$ -
Civil Infrastructure		$ -
Landscaping		$ -
Building		$ -
Utilities (electrical, water, sewer, telephone, gas, cable TV)		$ -
Uninterruptable Power Supply		$ -
Generator		$ -
Fire Protection System		$ -
Consoles		$ -
Furnishings (furniture, office equipment)		$ -
Central Communications		$ -
Central System Hardware		$ -
Video Display System		$ -
Central System Software		$ -
Integration		$ -

TEMPLATE FOR DETERMINING TMC FINANCIAL NEEDS
Annual Operating Expenditures

TMC Strategies	O&M
Central System Hardware	$ -
Central System Software	$ -
Software Licenses	$ -
Security	$ -
Building Maintenance	$ -
Utilities	$ -
Operating Supplies	$ -
Operations Support	$ -
ITS Support	$ -
Janitorial	$ -
Communications	$ -
Staff Training	$ -
SUBTOTAL	$ -
Operations Staff - Normal Hours Only	
Engineering	$ -
Operators	$ -
Operations Staff - Peak Hours Only	
Engineering	$ -
Operators	$ -
Operations Staff - Extended Hours Only	
Engineering	$ -
Operators	$ -
Operating Staff - 24 Hours	
Engineering	$ -
Operators	$ -
TOTAL	$ -

Costs should be estimated for each of the activities and strategies associated with the TMC program. There are a number of resources available to help determine an opinion of probable cost for the various components. Resources include:

- *Traffic Control System Operations – Installation, Management, and Maintenance* ITE, 2000
- *BiState St. Louis Area Intelligent Vehicle Highway System Planning Study*, 1994
- *Intelligent Transportation Systems Benefits and Costs 2003 Update*, May 2003 http://www.mitretek.org/its/benecost/BC_Update_2003/index.html#app_a

The template includes several operational scenarios from 8 hour per day operation up to 24 hour per day operation. These differing estimates of cost are associated with differing performance levels. This type of information in the Financial Plan will assist the decision makers in their decision on a preferred service level.

Examples of a summary of the TMC facilities are presented for the reader.

Estimate of Probable Cost for a 18,000 ft TMC building	
Architectural (building)	$1,611,480.00
Civil Construction	$227,425.00
Landscaping	$71,680.00
Furnishings	$110,000.00
Plumbing	$60,000.00
HVAC	$176,000.00
UPS	$184,000.00
Generator and Accessories	$157,900.00
Electrical	$130,200.00
Fire Protection	$59,000.00
Contingencies	$172,938.00
TOTAL	**$2,960,623.00**

Source: ADOT Central Control Facility Technical Memorandum

Examples of operational and maintenance costs for four different sizes of TMCs (regional, large, medium, and small) are presented to give the reader an idea of how the operations and maintenance funding needs can be presented in the Financial Plan.

Traffic Operations Center – Regional (Continous 24/7 operations)

Personnel	Regular Shift Operations			Yearly Overtime Operations	
Title	Annual Salary (1)	Number of Personnel	Hourly Rate	Total Hours at 96 Hours/ Person	Overtime, Hourly Rate
Director	$ 56,000	1.0	$ 26.92	0	$ 40.38
Shift Supervisor/Manager	$ 47,400	4.0	$ 22.79	384	$ 34.18
System Operator	$ 30,400	9.0	$ 14.62	864	$ 21.92
Software Programmer	$ 46,200	2.0	$ 22.21	192	$ 33.32
Communications Specialist	$ 46,200	2.0	$ 22.21	192	$ 33.32
Traffic Analysts	$ 40,000	2.0	$ 19.23	192	$ 28.85
Technician, Control Center	$ 36,500	4.0	$ 17.55	384	$ 26.32
Administrative Assistant	$ 32,000	2.0	$ 15.38	192	$ 23.08
IT Manager	$ 50,000	1.0	$ 24.04	96	$ 36.06
Subtotal		27.0	$ 369.23	2400	NA
Annual Total, Unloaded			$ 768,000		$ 49,300
Benefits Package	60%		$ 460,800	0%	$ -
Annual Total			$ 1,228,800		$ 49,300
Total Personnel Operations Cost for a Year					**$ 1,278,100**

Notes:
a. Overtime operations are 12 holidays during the normal work year at 8 hours per person per holiday.
b. This table does not include the effects of vacations and sick time.
c. This table is for a 24-hour-operation control center.

Physical Plant Costs	Unit Costs (1)	Size or Quantity	Yearly Cost
Monthly Building Operating Costs (See Note 4)			
Building Maintenance			$ 112,904
Utilities			$ 70,449
Operating Supplies			$ 298,729
Operations Support			$ 280,750
EDP Support			$ 666,939
Software Licenses			$ 236,300
Training (out-of-state)			$ 14,329
Training (in-state)			$ 33,423
Other			
AZTech Support			$ 125,000
Total Physical Plant Operations Cost for a Year			**$ 1,838,823**

Notes:
1. All costs were in 1994 dollars, unless otherwise noted. All costs have been converted to 2002 dollars based on the Consumer Price Index (CPI).
2. CPI conversion factor = 1.217
3. Based on ITS Unit Cost Database (as of September 30, 2002)
4. Source: PECOS- ITI Data Models, Final Report. Annual Operation and Maintenance Forecast, Phoenix TOC. Arizona Department of Transportation. Report No. FHWA-AZ98-464

Source: ITE - Traffic Control System Operations

Traffic Operations Center – Large (Short weekday: 12 hours per day/ 5 days per week)

Personnel	Regular Shift Operations			Yearly Overtime Operations	
Title	Annual Salary (1)	Number of Personnel	Hourly Rate	Total Hours at 96 Hours/ Person	Overtime, Hourly Rate
Director	$ 56,000	1.0	$ 26.92	0	$ 40.38
Shift Supervisor/Manager	$ 47,400	1.0	$ 22.79	96	$ 34.18
System Operator	$ 30,400	2.0	$ 14.62	192	$ 21.92
Software Programmer	$ 46,200	1.0	$ 22.21	0	$ 33.32
Communications Specialist	$ 46,200	1.0	$ 22.21	0	$ 33.32
Technician, Control Center	$ 36,500	1.0	$ 17.55	0	$ 26.32
Subtotal		7.0	$ 140.91	288	NA
Annual Total, Unloaded			$ 293,100		$ 7,500
Benefits Package	60%		$ 175,900	0%	$ -
Annual Total			$ 469,000		$ 7,500
Total Personnel Operations Cost for a Year					**$ 476,500**

Notes:
a. Overtime operations are 12 holidays during the normal work year at 8 hours per person per holiday.
b. This table does not include the effects of vacations and sick time.
c. This table is for a special event/incident response operation control center.
d. Personnel typically have other responsibilities in addition to these.

Physical Plant Costs	Unit Costs (1)		Size or Quantity		Yearly Cost
Monthly Building Operating Costs					
Rent (Yearly)	$ 12	/ft^2	1,100	ft^2	$ 13,400
HVAC & Electric (Daily)	$ 0.103	/kW	266.0	kW/day	$ 10,000
Maintenance	$ 946	/month	12	months	$ 11,400
General Supplies	$ 189	/month	12	months	$ 2,300
Communications, Telephone (General)					
Regular Phone Service	$ 405	/month	2	units	$ 11,300
Cellular Phones	$ 608	/month	2	units	$ 17,000
800 Number Service	$ 1,217	/month	1	number	$ 14,600
Communications, Modem Links					
Dial-up	$ 25	/drop/month (3)	12	locations	$ 3,500
Leased Lines	$ 122	/drop/month	23	agencies	$ 34,100
T-1 Lines (Video)	$ 700	/line/month (3)	1	agency	$ 700
Computers	**($ 189,000.00**	**Initial Cost)**			
Supplies	$ 572	/month	12	months	$ 6,900
Maintenance	10%	of initial cost/year	1	year	$ 18,900
Replacements	10%	of initial cost/year	1	year	$ 18,900
Miscellaneous					
Training	$ 500	/person	1	year	$ 3,500
Monthly Vehicle Costs	$ 0.61	/mile	1,944	mi/month	$ 14,200
Total Physical Plant Operations Cost for a Year					**$ 180,700**

Notes:
1. All costs were in 1994 dollars, unless otherwise noted. All costs have been converted to 2002 dollars based on the Consumer Price Index (CPI).
2. CPI conversion factor = 1.217
3. Based on ITS Unit Cost Database (as of September 30, 2002)
4. All costs are hypothetical and need to be determined for each location.

Source: MAG Regional Concept of Transportation Operations – Technical Memorandum No. 5/6 (May 7, 2003)

Traffic Operations Center – Medium (Peak period coverage: 8 hours per day/5 days per week)

Personnel	Regular Shift Operations			Yearly Overtime Operations	
Title	Annual Salary (1)	Number of Personnel	Hourly Rate	Total Hours at 96 Hours/ Person	Overtime, Hourly Rate
Director	$ 56,000	0.5	$ 26.92	0	$ 40.38
Shift Supervisor/Manager	$ 47,400	1.0	$ 22.79	96	$ 34.18
System Operator	$ 30,400	1.0	$ 14.62	96	$ 21.92
Software Programmer	$ 46,200	0.5	$ 22.21	0	$ 33.32
Communications Specialist	$ 46,200	0.5	$ 22.21	0	$ 33.32
Technician, Control Center	$ 36,500	0.5	$ 17.55	0	$ 26.32
Subtotal		4.0	$ 81.85	192	NA
Annual Total, Unloaded			$ 170,300		$ 5,400
Benefits Package	60%		$ 102,200	0%	$ -
Annual Total			$ 272,500		$ 5,400
Total Personnel Operations Cost for a Year					**$ 277,900**

Notes:
a. Overtime operations are 12 holidays during the normal work year at 8 hours per person per holiday.
b. This table does not include the effects of vacations and sick time.
c. This table is for a special event/incident response operation control center.
d. Personnel typically have other responsibilities in addition to these.

Physical Plant Costs	Unit Costs (1)	Size or Quantity	Yearly Cost
Monthly Building Operating Costs			
Rent (Yearly)	$ 12 /ft^2	600 ft^2	$ 7,300
HVAC & Electric (Daily)	$ 0.103 /kW	152.0 kW/day	$ 5,700
Maintenance	$ 541 /month	12 months	$ 6,500
General Supplies	$ 108 /month	12 months	$ 1,300
Communications, Telephone (General)			
Regular Phone Service	$ 405 /month	1 units	$ 6,500
Cellular Phones	$ 608 /month	1 units	$ 9,700
800 Number Service	$ 1,217 /month	1 number	$ 14,600
Communications, Modem Links			
Dial-up	$ 25 /drop/month (3)	7 locations	$ 2,000
Leased Lines	$ 122 /drop/month	13 agencies	$ 19,500
T-1 Lines (Video)	$ 700 /line/month (3)	1 agency	$ 700
Computers	**($ 108,000.00 Initial Cost)**		
Supplies	$ 327 /month	12 months	$ 3,900
Maintenance	10% of initial cost/year	1 year	$ 10,800
Replacements	10% of initial cost/year	1 year	$ 10,800
Miscellaneous			
Training	$ 500 /person	1 year	$ 2,000
Monthly Vehicle Costs	$ 0.61 /mile	1,111 mi/month	$ 8,100
Total Physical Plant Operations Cost for a Year			**$ 109,400**

Notes:
1. All costs were in 1994 dollars, unless otherwise noted. All costs have been converted to 2002 dollars based on the Consumer Price Index (CPI).
2. CPI conversion factor = 1.217
3. Based on ITS Unit Cost Database (as of September 30, 2002)
4. All costs are hypothetical and need to be determined for each location.

Source: MAG Regional Concept of Transportation Operations – Technical Memorandum No. 5/6 (May 7, 2003)

Traffic Operations Center – Small (Special event or incident response only)

Personnel	Regular Shift Operations			Yearly Overtime Operations	
Title	Annual Salary (1)	Number of Personnel	Hourly Rate	Total Hours at 96 Hours/ Person	Overtime, Hourly Rate
Director	$ 56,000	0.0	$ 26.92	0	$ 40.38
Shift Supervisor/Manager	$ 47,400	0.0	$ 22.79	0	$ 34.18
System Operator	$ 30,400	0.5	$ 14.62	0	$ 21.92
Software Programmer	$ 46,200	0.0	$ 22.21	0	$ 33.32
Communications Specialist	$ 46,200	0.0	$ 22.21	0	$ 33.32
Technician, Control Center	$ 36,500	0.5	$ 17.55	0	$ 26.32
Subtotal		1.0	$ 16.08	0	NA
Annual Total, Unloaded			$ 33,500		$ -
Benefits Package	60%		$ 20,100	0%	$ -
Annual Total			$ 53,600		$ -
Total Personnel Operations Cost for a Year					**$ 53,600**

Notes:
a. Overtime operations are 12 holidays during the normal work year at 8 hours per person per holiday.
b. This table does not include the effects of vacations and sick time.
c. This table is for a special event/incident response operation control center.
d. Personnel typically have other responsibilities in addition to these.

Physical Plant Costs	Unit Costs (1)		Size or Quantity		Yearly Cost
Monthly Building Operating Costs					
Rent (Yearly)	$ 12	/ft^2	150	ft^2	$ 1,800
HVAC & Electric (Daily)	$ 0.103	/kW	38.0	kW/day	$ 1,400
Maintenance	$ 135	/month	12	months	$ 1,600
General Supplies	$ 27	/month	12	months	$ 300
Communications, Telephone (General)					
Regular Phone Service	$ 405	/month	1	units	$ 4,900
Cellular Phones	$ 608	/month	1	units	$ 7,300
800 Number Service	$ 1,217	/month	1	number	$ 14,600
Communications, Modem Links					
Dial-up	$ 25	/drop/month (3)	2	locations	$ 500
Leased Lines	$ 122	/drop/month	3	agencies	$ 4,900
T-1 Lines (Video)	$ 700	/line/month (3)	1	agency	$ 700
Computers	**($ 27,000.00**	**Initial Cost)**			
Supplies	$ 82	/month	12	months	$ 1,000
Maintenance	10%	of initial cost/year	1	year	$ 2,700
Replacements	10%	of initial cost/year	1	year	$ 2,700
Miscellaneous					
Training	$ 500	/person	1	year	$ 500
Monthly Vehicle Costs	$ 0.61	/mile	278	mi/month	$ 2,000
Total Physical Plant Operations Cost for a Year					**$ 46,900**

Notes:
1. All costs were in 1994 dollars, unless otherwise noted. All costs have been converted to 2002 dollars based on the Consumer Price Index (CPI).
2. CPI conversion factor = 1.217
3. Based on ITS Unit Cost Database (as of September 30, 2002)
4. All costs are hypothetical and need to be determined for each location.

Source: MAG Regional Concept of Transportation Operations – Technical Memorandum No. 5/6 (May 7, 2003)

Once the funding requirements are known, it is useful to present the costs in a timeline format. Such a timeline will enable capital and operating budgets to be established for each fiscal year, including beyond the immediate near-term needs. These opinions of costs are then in a useful format for agency budgeting purposes.

SCHEDULE OF FUNDING

TMC Strategies	Annual Budgets					
	FY 1		FY 2		FY 3	
	Capital	O&M	Capital	O&M	Capital	O&M
Planning and Conceptual Design						
Design						
Land						
Construction						
Furnishings						
Central System						
Staff						
Building Maintenance						
Utilities						
Upgrades						

9.2 Budgeting and Funding Definitions, Issues, and Challenges

Once the financial needs have been established, the applicable funding sources have to be identified. Funding sources can be federal, state, or local funding. Federal funding is generally used for TMC projects. Several federal fund categories can be used both for the initial capital investment and for the on-going operations. The issue becomes one of whether the state is willing to use federal funds in a category that can be used for construction and spend them on operations and maintenance. Currently available and applicable general funding programs are summarized in the following Summary of Funding Sources. More details of each funding source are presented following the summary.

SUMMARY OF FUNDING SOURCES

Funding Sources	Eligibility		Qualifying Conditions
	Capital Expenditures	Operating Expenditures	
National Highway System (NHS)	✔	✔	80/20 percent federal/local match with no time limit on operations.
Surface Transportation Program (STP)	✔	✔	80/20 percent federal/local match within the initial project scope.
Interstate Maintenance (IM)	✔	✔	90/10 percent federal/local match
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	✔	✔	80/20 percent federal/local match for 2 years or longer if improvements are demonstrated.
TEA-LU	✔	✔	
ITS Integration	✔		50 percent federal/local match. 20 percent of match from non-federally derived sources.
National Corridor Planning and Development Program and Coordinated Border Infrastructure Program	✔		80 percent federal/local match.

National Highway System (NHS) – Provides for capital and operating costs for traffic monitoring, management, and control facilities and programs. Funds provided on an 80/20 percent federal/local match basis with no time limit for operations.

Surface Transportation Program (STP) – Provides for capital and operating costs for traffic monitoring, management, and control facilities and programs. Funds provided on an 80/20 percent federal/local match basis within the initial project scope.

Congestion Mitigation and Air Quality Improvement Program (CMAQ) – Provides funds for the establishment or operation of traffic monitoring, management, and control facility or program in non-attainment areas. Explicitly includes, as an eligible condition for funding, programs or projects that improve traffic flow. Funds provided for O&M on an 80/20 percent federal/local match basis for 2 years, or longer if the project demonstrates air quality improvement benefits on a continuing basis.

Interstate Maintenance – The Interstate Maintenance Program was created to provide funds to states to maintain previously-completed sections of the Interstate System. Some states have used these funds for capital investments in Traffic Management Centers and operations that serve the Interstate System. Funds are provided on a 90/10 percent federal/local match basis.

SAFETEA/TEA-LU (2004 Reauthorization Bill) will also authorize several additional Federal funding mechanisms which are available specifically to aid in the deployment and operation of ITS.

ITS Integration – This component of the ITS Deployment Program provides funding for activities necessary to integrate ITS infrastructure components that are either deployed (existing) or will be deployed with other sources of funds. This may include the integration of different ITS systems or sub-systems (e.g., freeway management, arterial management, etc.) or the integration of like ITS components across jurisdictions. Eligible activities include the system design and integration, creation of data sharing/archiving capabilities, deployment of components that support integration with systems outside of metropolitan areas. The ITS Integration Program can fund up to 50 percent of an integration project's costs with a minimum of 20 percent of the local match to come from non-federally derived sources. The other 30% match could come from other Federal funds or non-federal funds.

The **National Corridor Planning and Development Program and Coordinated Border Infrastructure Program** – was established under Sections 1118 and 1119 of the Transportation Equity Act for the 21st Century (TEA-21). The Coordinated Border Infrastructure Program aims to improve border infrastructure and transportation telecommunications to facilitate the safe and efficient movement of people and goods at or across the U.S.-Canada and the U.S.-Mexico borders. The National Corridor Planning and Development Program provides DOT authority to allocate dollars to states and metropolitan planning organizations (MPOs) for coordinated planning, design and construction of highway corridors. Criteria under which the Border program project funding applications will be reviewed include reduction in travel time through a major international facility, potential for improvements in border crossing vehicle safety and cargo security, and the applicability of innovative techniques and technology to other border crossing facilities. The Federal share for projects funded through these programs is 80% (sliding scale applies).

- For a single agency ownership model, the TMC budget may be part of overall agency budget. A joint agency budgeting model results in more complex budgeting and funding arrangements
- Budgeting and funding challenges:
  - Joint funding: determining budget sharing arrangements, meeting and maintaining commitments, working within different budget cycles and processes.
  - Competition for funding sources and recognized need at the local level for ITS and traffic operations
  - Frequently, inadequate accounting for ITS system maintenance, upgrades, and operations. Federal grants have typically funded capital development leaving operations and system maintenance to state and local agencies. Some TMCs have suffered declines in staffing and maintenance following the cessation of federal funding periods.

FAST Center Requirements Background Technical Memorandum 3/12/99

6.1 Cost of the Building

Generally, the construction costs of a building of this nature are in the neighborhood of $175 per square foot resulting in a cost of $2,600,000 for the building, excluding land and computer equipment. There are additional costs as outlined in the following list:

Generator	$ 16,000
Security System	$ 30,000
Parking Lot Mod.	$ 20,000
Outside Media Access	$ 18,000
Fencing	$ 10,000
Furniture	$ 75,000
NHP Dispatch Station	$ 14,500
PBX System	$ 40,000
Copier, Fax, Printers	$ 10,000
Landscaping	$ 50,000
Misc. @ 10%	$ 40,000
Spare Parts & Test Equipment	$400,000
Total	$723,500

The total cost of the building and its accommodations, excluding hardware, software, and central system equipment, is expected to be $3,350,000. Engineering costs should be estimated at an additional 25%. Adding a 25% contingency results in a total of $5,240,000.

6.2 Recurring Costs for Operation and Maintenance (O&M)

The estimated cost of salaries for the individuals described in the organization chart is $1.4 million annually for pilot corridor implementation and increases to $2.7 million annually for the ten year horizon plan. The cost of overhead and retirement benefits is expected to be approximately 55 percent of the salary cost. In addition, the replacement cost for equipment will be approximately 10 percent per year of the capital cost.

9.3 Budget Planning Processes

When federal funds are involved, it is important to understand the budgeting process very early in the TMC program. As most agencies know, there is typically a long lead time associated with getting the budgets approved. The budgets must go through the approval process to be included in the MPO Transportation Improvement Program, then in the State Improvement Program, and finally to get the federal money programmed.

The process to get a project included in the MPO Transportation Improvement Program varies from agency to agency, but it can take up to a year. In most cases, the TIP is for a three to five year period and if a project misses the update cycle, either it has to wait for the next TIP update or go through a process to amend the TIP during the life of the TIP. It is important to identify and understand the defined process for decision-making in the agency/region/state that includes the linkage to budget-cycles/processes of all partner agencies, application procedures, prioritization procedures, etc.

A typical time line is presented to illustrate the general time periods that might be involved.

TYPICAL SCHEDULE OF BUDGETING PROCESS

Activities	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT
Submit Federal Project Request	■												
Review Federal Projects		■											
Finalize Recommended Federal Projects				■									
Submit Local Projects				■									
Approval of Federal Projects					■								
Draft TIP					■	■							
Review of TIP						■							
Committee and Council Reviews							■	■					
Recommended TIP									■				
Public Hearings											■		
Final Approval of TIP												■	
TIP is Submitted to the STIP													■

It is important to view the TMC program as part of a larger strategic vision for transportation management, incident management, emergency management, and homeland security for the region or state. With this perspective, it may be possible to establish funding linkages to larger goals for the area and have the TMC funded as part of other programs. The TMCs vital role in a number of important regional transportation, operations and incident management functions could greatly help support funding justification for improvements, expansions, additional functions, and integration strategies.

Another factor to consider in the planning is the fact that any new building for a TMC may be the responsibility of the Finance and Administration Department of state government or local government. As such, there are additional steps and approvals that are necessary in getting budgets approved before going to the MPO for inclusion in the TIP.

In leading a TMC program, it is also important to plan for multi-year strategic plans that determine the direction of budgeting activities over a multi-year time horizon (Examples: Houston TranStar, TRANSCOM). These are essential for obtaining political and funding support as well as for establishing internal funding priorities.

The budgeting process is often quite lengthy; however, there are numerous steps that follow to obligate the budgeted funds. This process of obligating the funds and establishing a "project" with the FHWA (if federal funds are being used) and in the agency's accounting system can add six months to the overall process. It is important to recognize this as the overall schedule for financing and deploying a TMC is developed in the Business Plan.A typical process for a state to obligate funds when federal funds are involved is described below to give the reader an idea of other activities to be accounted for in the Financial Plan.

1. Project manager prepares a request for federal funds and submits the request to the administrative office which handles the requests for authorization with the FHWA.
2. The agency administrative office prepares and submits to the FHWA a *Letter of Authorization and Project Agreement.* At this time a state project number and a federal project number is assigned.
3. FHWA reviews and approves the authorization request.
4. Project Manager schedules a presentation and presents the project to the agency's project review committee for approval before moving forward.
5. Following approval by the project review committee, the Project Manager proceeds to present the project to a program project authorization committee.
6. Once the project has been approved by staff through the above steps, it is ready for submittal to the state transportation board (appointed officials) for final approval.
7. When the state transportation board approves the project, it becomes an authorized project and the next steps of design can begin.

The above typical process illustrates the importance of understanding the total breadth of activities that are involved in getting funding approved. The success of a timely deployment of a Transportation Management Center is dependent on many things, not the least of which is having a proactive approach to getting approval of the financial side of the TMC deployment.

9.4 Fund Sharing Models

There are numerous models that have been used for funding a Transportation Management Center program. These models range from a single agency funding the initial capital costs and the annual operations and maintenance costs to a public/private arrangement where the private partner provides improvements to the TMC, provides the operators and the maintenance in exchange for traveler information. In the latter, the traveler information is then used as a means to sell advertising for the broadcast media.

Single Agency Funding – The simplest funding model is for a situation where one agency funds the entire implementation and operations costs, such as the INFORM center on Long Island, NY. This has the advantage of the owning agency having full control and thus no interagency coordination to contend with, but it also requires that the owning agency obtain all the funding either locally or from other federal or state funds.

Funding Allocation Based On TMC Utilization – A funding model used in some large TMCs such as Houston TranStar splits operating costs for facilities, computer systems, and telecommunications systems among agencies co-located within the TMC according to utilization of floor space, computer space and telecommunications usage.

Funding Allocation Based on TMC Coverages – When multiple agencies utilize one TMC, it is possible to share the costs among the agencies based on the number of field devices in each jurisdiction that is sharing the TMC. The Las Vegas region's program, FAST, uses a 'fair-share' funding formula based on the number of devices in each jurisdiction.

Funding From User Fees or Dues – Depending on the nature of the TMC functions, it may be possible for the users of the TMC or the ones benefiting from the TMC to support it with user fees. Operating costs for TRANSCOM's Traffic Operations Center are funded from member agency dues, which are based on direct benefit and ability to pay. TRANSCOM is a 501c3 (non-profit) corporation dedicated to coordinating traffic information among members in the New York and New Jersey areas. They effectively fund their program using user fees paid by those benefiting from the TRANSCOM traveler information.